AMENDMENTS TO THE CLAIMS

1-16. (Cancelled)

17. (Previously Presented) A method for observing ice draft of desired sea ice comprising:

a) measuring ice draft and drift velocity of sea ice passing over a moored ice thickness measurement sonar to make an ice draft profile, and synchronously measuring an SAR backscattering coefficient of said sea ice passing over the moored ice thickness measurement sonar to make an SAR backscattering coefficient profile;

b) calculating a relational formula between said ice draft profile and said SAR backscattering coefficient profile;

c) calculating the ice draft of the desired sea ice from said relational formula and an SAR backscattering coefficient of said desired sea ice.

18. (Previously Presented) The method according to claim 17, wherein the SAR backscattering coefficient is a backscattering coefficient of L-band HV polarization measured using SAR.

19. (Previously Presented) The method according to claim 17, further comprising:

measuring a backscattering coefficient of X-band VV polarization to detect sea ice thinner than approximately 10 cm.

20. (Previously Presented) The method according to claim 17, further comprising:

observing a ratio of a backscattering coefficient of X-band VV polarization to a backscattering coefficient of X-band HH polarization to detect sea ice thinner than approximately 10 cm.

21. (Previously Presented) A computer program in a computer readable medium for observing ice draft of desired sea ice comprising:

a) calculating a relational formula between an ice draft profile of sea ice and an SAR backscattering coefficient profile of said sea ice from ice draft data of said sea ice, drift velocity data of said sea ice and SAR backscattering coefficient profile data; and

b) calculating the ice draft of the desired sea ice from said relational formula and an SAR backscattering coefficient of said desired sea ice.

22. (Previously Presented) The computer program according to claim 21, wherein the SAR backscattering coefficient is a backscattering coefficient of L-band HV polarization measured using SAR.

23. (Previously Presented) The computer program according to claim 21, further comprising:

recognizing a target as open water when a backscattering coefficient of X-band VV polarization of the target is not more than a predetermined value,

recognizing the target as thin ice or thick ice when the backscattering coefficient of X-band VV polarization of the target is not less than a predetermined value, and

recognizing the target as thick ice when a backscattering coefficient of X-band HH polarization of the target is not less than a predetermined value or a backscattering coefficient of L-band HH polarization of the target is not less than a predetermined value.

24. (Previously Presented) The comptuer program according to claim 23, further comprising:

recognizing the target as thin ice when the backscattering coefficient of X-band VV polarization of the target is larger than the backscattering coefficient of X-band HH polarization of the target by a predetermined value.

25. (Previously Presented) A recording medium readable by a computer having stored thereon a computer program for observing ice draft of desired sea ice, comprising:

a) calculating a relational formula between an ice draft profile of sea ice and an SAR backscattering coefficient profile of said sea ice from ice draft data of said sea ice, drift velocity data of said sea ice and SAR backscattering coefficient profile data; and

b) calculating the ice draft of the desired sea ice from said relational formula and an SAR backscattering coefficient of said desired sea ice.

26. (Previously Presented) The recording medium according to claim 25, wherein the SAR backscattering coefficient is a backscattering coefficient of L-band HV polarization measured using SAR.

27. (Previously Presented) The recording medium according to claim 25, wherein the computer program further comprising:

recognizing a target as open water when a backscattering coefficient of X-band VV polarization of a target is not more than a predetermined value,

recognizing the target as thin ice or thick ice when the backscattering coefficient of X-band VV polarization of the target is not less than a predetermined value, and

recognizing the target as thick ice when a backscattering coefficient of X-band HH polarization of the target is not less than a predetermined value or when a backscattering coefficient of L-band HH polarization of the target is not less than a predetermined value.

28. (Previously Presented) The recording medium according to claim 27, wherein the computer program further comprising:

recognizing the target as thin ice when the backscattering coefficient of X-band VV polarization is larger than the backscattering coefficient of X-band HH polarization by a predetermined value.

29. (Previously Presented) A system for observing ice draft of desired sea ice comprising:

a moored ice thickness measuring sonar moored into the sea for measuring thickness of ice draft of the sea ice drifting above said moored ice thickness measuring sonar continuously to make a draft profile of said sea ice;

a current meter moored into the sea for measuring velocity and direction of said sea ice drifting above said moored ice thickness measuring sonar continuously to make the draft profile of said sea ice; and

an airborne SAR which observes around said sea ice to obtain SAR backscattering coefficients, synchronized with measurement of said moored ice thickness measuring sonar and said current meter, in order to make an SAR backscattering coefficient profile of said sea ice drifting above said moored ice thickness measuring sonar using said obtained SAR backscattering coefficients, deduce a relational expression between said draft profile of said sea ice and said SAR backscattering coefficient profile of said sea ice; and calculate ice draft of the desired sea ice from said relational expression and the SAR backscattering coefficient of desired sea ice.

30. (Previously Presented) The system according to claim 29, wherein said moored ice thickness measuring sonar is an ice profiling sonar.

31. (Previously Presented) The system according to claim 29, wherein said current meter is an acoustic Doppler current profiler.

32. (Previously Presented) The system according to claim 29, wherein said airborne SAR is configured to obtain backscattering coefficient data.

33. (Previously Presented) The system according to claim 29, further comprising a calculating device.

34. (Previously Presented) The system according to claim 33, wherein said calculating device is configured to calculate relational formula between an ice draft profile and an SAR backscattering coefficient profile, and said calculating device is further configured to calculate ice draft of the desired sea ice from said relational formula and an SAR backscattering coefficient of said desired sea ice.